

Amendments to the Claims:

Please amend the claims as follows:

This listing of the claims will replace all prior versions, and listings of the claims in this application.

1. (Currently amended) A method for analyzing pulmonary three-dimensional CT data, wherein the three-dimensional CT data include a plurality of two-dimensional slice images having image elements, wherein values of the image elements correspond to Hounsfield units, the method comprising the steps of: loading the three-dimensional CT data; and performing a detection of ground glass opacities in the plurality of two-dimensional slice images of the three-dimensional CT data on the basis of a texture analysis, wherein the texture analysis includes the step of: determining a typical Hounsfield value of a local pulmonary parenchyma on the basis of a peak of a texture based roughness-histogram.

Please cancel claim 2 without prejudice or disclaimer.

3. (Original) The method of claim 1, wherein the texture analysis includes the steps of: computing a typical parenchyma Hounsfield value for the lung; and marking all areas in the lung area with a Hounsfield value higher than the typical parenchyma Hounsfield value.

4. (Original) The method of claim 1, wherein the texture analysis includes the steps of: determining first image elements in the plurality of two-dimensional slice images belonging to the lung by performing a segmentation of the lung from in the plurality of two-dimensional slice images; and determining second image elements from the first image elements; wherein the second image elements belong to a solid structure.

5. (Original) The method of claim 4, wherein the determination of the second image elements belonging to a solid structure includes the steps of: a) determining a third starting image element of the first image elements; b) determining 8 directly neighbouring image elements for the third starting image element; c) determining a fourth image element of the 8 directly neighbouring image elements having the highest Hounsfield value; d) choosing the fourth image element having the highest Hounsfield value as new third starting image element and iteratively repeating steps a) to d).

6. (Previously presented) The method of claim 4, wherein the texture analysis includes the steps of:

determining fifth image elements which are part of the first image elements but not part of the second image elements; sampling sixth image elements in a neighbourhood of each of the fifth image elements; determining a roughness histogram on the basis of the fifth and sixth image elements; accumulating the roughness histogram; determining a peak value of a peak in the accumulated roughness histogram; entering the peak value into a list structure in case the value exceeds a Hounsfield value of approximately -700 HU; and determining ground glass opacities in the lung from pulmonary three-dimensional CT data on the basis of the list structure.

7. (Currently amended) Image processing device, comprising: a memory for storing pulmonary three-dimensional CT data, wherein the three-dimensional CT data include a plurality of two-dimensional slice images consisting of image elements, wherein values of the image elements correspond to Hounsfield units; and an image processor for analyzing the pulmonary three-dimensional CT data, which image processor is adapted to perform the following operation: loading the three-dimensional CT data; and performing a detection of ground glass opacities in the plurality of two-dimensional slice images of the three-dimensional CT data on the basis of a texture analysis, wherein the texture analysis includes the following operation: computing a typical parenchyma Hounsfield

value for the lung; and marking all areas in the whole lung area with a Hounsfield value higher than the typical parenchyma Hounsfield value.

8. (Original) The image processing device of claim 7, wherein the texture analysis includes the following operation: determining a typical Hounsfield value of a local pulmonary parenchyma on the basis of a peak of a texture based roughness-histogram.

Please cancel claim 9 without prejudice or disclaimer.

10. (Currently amended) A computer readable medium containing instructions for controlling a computerized image processing device to analyze pulmonary three-dimensional CT data, wherein the three-dimensional CT data include a plurality of two-dimensional slice images having image elements, wherein the image elements correspond to Hounsfield units, the analyzing comprising the steps of: loading the three-dimensional CT data; and performing a detection of ground glass opacities in the plurality of two-dimensional slice images of the three-dimensional CT data on the basis of a texture analysis, wherein the texture analysis includes the steps of: determining first image elements in the plurality of two-dimensional slice images belonging to the lung by performing a segmentation of the lung from in the plurality of two-dimensional slice images; and determining second image elements from the first image elements; wherein the second image elements belong to a solid structure.

11. (New) The computer readable medium of claim 10 wherein the texture analysis includes the step of: determining a typical Hounsfield value of a local pulmonary parenchyma on the basis of a peak of a texture based roughness-histogram.

12. (New) The computer readable medium of claim 10 wherein the texture analysis includes computing a typical parenchyma Hounsfield value for the lung; and marking all areas in the whole lung area with a Hounsfield value higher than the typical parenchyma Hounsfield value.

13. (New) The computer readable medium of claim 10 wherein the determination of the second image elements belonging to a solid structure includes the steps of: a) determining a third starting image element of the first image elements; b) determining 8 directly neighbouring image elements for the third starting image element; c) determining a fourth image element of the 8 directly neighbouring image elements having the highest Hounsfield value; d) choosing the fourth image element having the highest Hounsfield value as new third starting image element and iteratively repeating steps a) to d).

14. (New) The computer readable medium of claim 10 wherein the texture analysis includes the steps of determining fifth image elements which are part of the first image elements but not part of the second image elements; sampling sixth image elements in a neighbourhood of each of the fifth image elements; determining a roughness histogram on the basis of the fifth and sixth image elements; accumulating the roughness histogram; determining a peak value of a peak in the accumulated roughness histogram; entering the peak value into a list structure in case the value exceeds a Hounsfield value of approximately -700 HU; and determining ground glass opacities in the lung from pulmonary three-dimensional CT data on the basis of the list structure.

15. (New) The computer readable storage medium of claim 10 wherein determining second image elements includes identifying image elements that belong to the solid structure.

16. (New) The computer readable storage medium of claim 15 wherein identifying image elements includes identifying a monotonic change in the value of image elements in the neighborhood of an image element.

17. (New) The method of claim 1 including generating the texture based roughness-histogram, wherein generating includes:

determining a local variation in image element values in a spatial neighborhood of a first region of the image;
using a result of the determination to generate the texture based roughness histogram.

18. (New) The method of claim 17 wherein determining includes:
comparing the value of a first image element to the value of a second image element that is a spatial neighbor of the first image element;
repeating the step of comparing for a plurality of image elements that are spatial neighbors of the first image element.

19. (New) The method of claim 17 wherein the spatial neighborhood consists of a region within a neighborhood of about 5 to 10 mm of the first region.

20. (New) The method of claim 17 including repeating the step of determining for a plurality of regions of the image.

21. (New) The method of claim 1 comprising:
determining that a first image element does not belong to a solid structure of the lung;
sampling image elements in a spatial neighborhood of the first image element;
using a result of the sampling to produce the roughness histogram;
identifying the peak of the roughness histogram;
depending on the value of the identified peak, identifying the first image element as a potential ground glass opacity.